

Back Scratcher

Lesson Overview:

Suggested Time: 45-60 minutes

Learning Objectives:

- To get experience testing and iterating
- To build with criteria in mind
- To understand how to connect different materials to

Materials:

- Interlocking building bricks and/or
- Cardboard
- Paper
- Masking tape
- Paperclips
- String
- Straws
- pipe cleaners
- popsicle sticks
- Paper towel tubes

Directions:

1. Tell they will engineer a solution to solve the problem of an itchy back. Discuss criteria for a successful design which should include:
 - a. Does this design satisfy an itchy back?
 - b. Can it be used without it falling apart?
2. Have students work in teams to brainstorm and figure out to solve the problem of an itchy back. Encourage creativity reminding students that designs may differ even though they are all solving the same problem.
3. This activity does not require intricate planning, but have students sketch their ideas and label the different materials they would like to use.
4. After students have formulated a plan, allow them to build their ideas in teams using the available materials. Ask them how they will know when their design is finished and works.
5. Allow students to share their ideas and designs to get feedback from peers, keeping in mind the design's ability to solve the problem and meet the criteria for success.
6. Give students five minutes to use the information gained from testing and the feedback to improve their designs.
7. Students can share final designs by showing the group how they work, designing an advertisement, or another activity that meets classroom goals.

